

SETTING A STATIC IP ADDRESS AND DNS SERVER IN UBUNTU

Article was written using a Ubuntu server which is debian based. Other distros such as RedHat and SUSE may take different steps to configure networking.

If you require a static IP address for a Linux machine, you must configure a specific config file via the command line, there are GUI tools available which allow you to achieve this too.

So let's start by first identifying the following:

- IP Address for the machine
- Netmask (AKA subnet mask)
- Default Gateway
- Broadcast Address
- Network Address
- Internal DNS Servers

To find your broadcast and network address use a subnet calculator

Once you have worked out the details above, you will then be ready to configure your machine. Please note it's best to have physical access to the machine when doing the configuration, as doing so remotely can leave you disconnected permanently if you get something wrong.

Setting a static IP Address

We will do the configuration all from the command line (Terminal).

Identify the network interface you want to assign the IP Address to, to do this execute the following command:

```
ifconfig -a
```

You should see something similar to the image below:

```
@ubuntu8:~$ ifconfig -a
eth0      Link encap:Ethernet  HWaddr 00:50:56:9e:5d:58
          BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
          Interrupt:17 Base address:0x1400

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
```

As you can see this machine only has one physical interface, **eth0** and one loopback. You will need to note down the interface name before continuing.

So let's configure the interface, execute the following command:

```
sudo nano /etc/network/interfaces
```

You need to insert the details as shown in the screenshot below:

```
GNU nano 2.0.7      File: /etc/network/interfaces      Modified
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

# The loopback network interface
auto lo
iface lo inet loopback

# The physical network interface eth0 settings
auto eth0
iface eth0 inet static
address 10.98.231.251
netmask 255.255.255.0
network 10.98.231.0
broadcast 10.98.231.255
gateway 10.98.231.1
-
```

Once you have finished editing type **Ctrl X** and type **Yes** to save the configuration file. Even though we have edited the interface details it will not be live until we restart the networking services, which you can do via a reboot or by executing the following command:

```
sudo /etc/init.d/networking restart
```

You have now configured your linux machine with a static IP Address on interface **eth0**, but to confirm this has occurred execute the following command:

```
ifconfig
```

If you output as below you were successful:

```
eth0      Link encap:Ethernet  HWaddr 00:50:56:9e:5d:58
          inet addr:10.98.231.251  Bcast:10.98.231.255  Mask:255.255.255.0
          inet6 addr: fe80::250:56ff:fe9e:5d58/64  Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:9 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:590 (590.0 B)  TX bytes:238 (238.0 B)
          Interrupt:17 Base address:0x1400
```

You can also test connectivity by pinging your local gateway address.

```
ping 10.98.231.1 -c 4
```

Setting DNS Servers

DNS servers are required for name resolution.

So to start we will create a file called **resolv.conf** and will use google's OpenDNS servers.

```
sudo nano /etc/resolv.conf
```

Write the following into the config file:

```
GNU nano 2.0.7      File: /etc/resolv.conf      Modified
nameserver 8.8.8.8
-
```

Once you have edited type **Ctrl X** and type **Yes** to save the configuration file. You now have DNS resolution so pinging Google.com will work and so will normal web browsing.

Source: <http://infotechshare.wordpress.com/2010/10/11/setting-a-static-ip-address-and-dns-server-in-linux/>